

WHAT IS CLAIMED IS:

1. An information recording and reproducing method in which information is recorded by irradiating a recording track on a recording medium with an energy beam and thereby forming recording marks, said information recording and reproducing method comprising the steps of:

    wobbling or deforming said recording track with a predetermined period;

    generating a recording clock from a signal obtained by detecting the wobble or deformation of said recording track;

    generating said recording marks in synchronism with said recording clock; and

    setting a conversion multipling factor between a period of the signal obtained by detecting said wobble or deformation and a period of said recording clock, [based on pre-recorded information of control data on said recording medium.]

2. An information recording and reproducing method according to claim 1, comprising the steps of:

    making quantities of user data recorded per single sector equal irrespective of a value of the conversion multiplying factor used when generating said recording clock from said signal obtained by detecting said wobble or deformation; and

    making a length of a buffer area preceding a head of a user data portion or a buffer area following

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a terminus portion of said user data portion longer as  
the conversion multiplying factor becomes higher.

3. An information recording and reproducing  
method according to claim 2, comprising the step of  
keeping a physical length ranging from a head of said  
buffer area preceding said user data portion to a  
terminus portion of said buffer area following said  
user data portion at a nearly same length without  
depending upon said conversion multiplying factor.

4. An information recording and reproducing  
method according to claim 3, comprising the step of  
conducting recording over a length of said buffer area  
preceding said user data portion and/or a length of said  
buffer area following said user data portion in a  
control data zone of said recording medium beforehand.

5. An information recording and reproducing  
apparatus comprising:

an energy beam generator

a power adjusting mechanism for adjusting a  
power level of an energy beam generated by said energy  
beam generator;

a holding mechanism capable of holding a  
recording medium;

a moving mechanism for irradiating said  
recording medium with said energy beam and relatively  
moving said energy beam with respect to said recording  
medium; and

a detector for detecting an energy beam

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reflected or transmitted in said information recording and reproducing apparatus, [a recording track on said recording medium being wobbled or deformed with a predetermined period, the wobble or deformation of said recording track being detected based upon a detection signal supplied from said energy beam detector] a recording clock being generated from a signal obtained by detecting the wobble or deformation, [a power level of said energy beam being changed in synchronism with said recording clock] a conversion multiplying factor between a period of the signal obtained by detecting said wobble or deformation and a period of said recording clock being set based on pre-recorded information of control data on said recording medium.

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6. An information recording and reproducing apparatus according to claim 5,

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wherein quantities of user data recorded per single sector are made equal irrespective of a value of the conversion multiplying factor used when generating said recording clock from said signal obtained by detecting said wobble or deformation; and

wherein a length of a buffer area preceding a head of a user data portion or a buffer area following a terminus portion of said user data portion is made longer as the conversion multiplying factor becomes higher.

7. An information recording and reproducing apparatus according to claim 6, wherein a physical

length ranging from a head of said buffer area preceding said user data portion to a terminus portion of said buffer area following said user data portion is kept at a nearly same length without depending upon said conversion multiplying factor.

8. An information recording and reproducing apparatus according to claim 7, wherein information of a length of said buffer area preceding said user data portion and/or information of a length of said buffer area following said user data portion recorded in a control data zone of said recording medium beforehand are read as disk data, and based upon the information, the length of said buffer area preceding said user data portion or the length of said buffer area following said user data portion is determined.

9. An information recording and reproducing method comprising the steps of:

irradiating a recording track on a recording medium with an energy beam;

detecting an intensity of an energy beam reflected or transmitted by said recording medium, out of said energy beam with which said recording medium is irradiated;

reproducing information recorded on said recording medium, from an intensity signal of said reflected or transmitted energy beam;

wobbling or deforming said recording track with a predetermined period;

generating a reproducing clock from a signal obtained by detecting the wobble or deformation of said recording track;

discriminating reproduced data by taking said reproducing clock as a reference; and

setting a conversion multiplying factor between a period of the signal obtained by detecting said wobble or deformation and a period of said reproducing clock, based on pre-recorded information of control data on said recording medium.

10. An information recording and reproducing apparatus comprising:

an energy beam generator;

a power adjusting mechanism for adjusting a power level of an energy beam generated by said energy beam generator;

a holding mechanism capable of holding a recording medium;

a moving mechanism for irradiating said recording medium with said energy beam and relatively moving said energy beam with respect to said recording medium; and

a detector for detecting an energy beam reflected or transmitted in said information recording and reproducing apparatus, said recording track being wobbled or deformed with a predetermined period, a reproducing clock being generated from a signal obtained by detecting the wobble or deformation of said

recording track, reproduced data being discriminated by taking said reproducing clock as a reference, a conversion multiplying factor between a period of the signal obtained by detecting said wobble or deformation and a period of said reproducing clock being set based on pre-recorded information of control data on said recording medium.

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